

Appl. No. 10/707,390  
Docket No. PES-D-02-038/PES-0183

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## REMARKS / ARGUMENTS

### Status of Claims

Claims 1-27 and 31-32 are pending in the application. Claims 1-7, 9-26, and 31-32 stand rejected. Claims 8 and 27 are objected to as being dependent upon a rejected claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Applicant appreciates the Examiner's notation of the allowable claims. Applicant has canceled Claim 8, and has amended Claims 1, 7, 11, 16 and 25, leaving Claims 1-7, 9-27 and 31-32 for consideration upon entry of the present Amendment.

Applicant respectfully submits that the rejections under 35 U.S.C. §102(b) and 35 U.S.C. §103(a) have been traversed, that no new matter has been entered, and that the application is in condition for allowance.

### Rejections Under 35 U.S.C. §102(b)

Claims 1, 11, 13-15, 25 and 31 stand rejected under 35 U.S.C. §102(b) as being anticipated by Fujita. (U.S. Publication No. US2002/0148502, hereinafter Fujita).

Applicant traverses this rejection for the following reasons.

Applicant respectfully submits that "[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, *in a single prior art reference.*" *Verdegaal Bros. V. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987) (emphasis added). Moreover, "[t]he identical invention must be shown in as complete detail as is contained in the \*\*\* claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). Furthermore, the single source must disclose all of the claimed elements "arranged as in the claim." *Structural Rubber Prods. Co. v. Park Rubber Co.*, 749 F.2d 707, 716, 223 U.S.P.Q. 1264, 1271 (Fed. Cir. 1984). Missing elements may not be supplied by the knowledge of one skilled in the art or the disclosure of another reference.

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Titanium Metals Corp. v. Banner, 778 F.2d 775, 780, 227 U.S.P.Q. 773, 777 (Fed. Cir. 1985).

Regarding Independent Claim 1

Applicant has canceled Claim 8, and has amended Claim 1 to include the limitations of Claim 8. In view of Claim 8 being directed to allowable subject matter (Paper No. 20060703, page 16), Applicant respectfully requests entry of the amendment to Claim 1, and notice of allowance thereof.

Additionally, Applicant has amended Claim 1 to now recite, inter alia:

“...a power source in electrical communication with each of the actuatable valves, wherein the power source is configured to prevent more than one of the actuatable valves from simultaneously having an actuated state...”.

Dependent claims inherit all of the limitations of the respective parent claim.

While Applicant believes that the scope of the invention both prior to and subsequent to the amendment includes the “prevent” limitation that is material to patentability, Applicant nonetheless includes this amendment to further clarify the subject matter regarded as the invention.

On page 2 of Paper No. 20060703, the Examiner remarks that “The power source [of Fujita] is ‘adapted to prevent...’ because there are separate actuation signals sent to each of the valves (see Fig. 1) and there is a mode in which the valves are actuated one at a time which inherently prevents the actuation of the other devices.”

Applicant respectfully disagrees with the Examiner.

First, Applicant does not find, and the Examiner has not stated with specificity, where Fujita discloses any *prevention* of a second valve being actuated in the presence of a first valve having been actuated.

Second, and as best understood by Applicant, it appears that the Examiner is using an inherency argument to show that the actuation of one valve at a time *inherently* prevents the actuation of another valve. In respectful disagreement with the Examiner, Applicant finds no justification in Fujita to arrive at this conclusion, and further

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respectfully submits that for an inherency argument to stand, the Examiner must show that the claimed limitation *is necessarily present* in the prior art reference.

Accordingly, Applicant submits that Fujita does not disclose all of the claimed elements arranged as in the claim, and absent anticipatory disclosure in Fujita of each and every element of the claimed invention arranged as in the claim, Fujita cannot be anticipatory.

Regarding Independent Claim 25

Applicant has amended Claim 25 to now recite:

"A gas regulation system, comprising:

a power source;

a manifold;

*a plurality of control modules*, each of the control modules comprising:

*a processing unit* responsive to an external control signal; and

*an actuatable valve* responsive to the processing unit and the power source, and adapted for fluid communication between a gas storage device and the manifold, the actuatable valve having a known resistance in an actuated state;

*a resistance-based interlock defined by an electrical series of resistances of each of the actuatable valves, the interlock being active in response to one of the actuatable valves being in an actuated state, thereby defining a threshold resistance comprising the known resistance;*

*wherein the power source has a power output insufficient to overcome the threshold resistance, thereby preventing more than one of the actuatable valves from simultaneously having an actuated state;*

*wherein only one of the actuatable valves opens to provide fluid communication between the gas storage device and the manifold in response to a signal from the processing unit and in the absence of another of the actuatable valves of a second control module of the plurality of control modules being open."*

No new matter has been added, as antecedent support can be found in the application as originally filed, such as at Paragraph [0028], for example.

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In rejecting Claim 25 for reasons relating to anticipation, the Examiner merely remarks: "Regarding claim 25, a control module for a gas regulation system having a manifold, the control module comprising a processing unit responsive to an external control signal, an actuatable valve responsive to the processing unit and a power source, and adapted for fluid communication between a gas storage device and the manifold."

First, the Examiner does not state with specificity where Fujita discloses *the control module comprising a processing unit*. On page 2 of the instant office action, the Examiner remarks that Fujita discloses "a plurality of control modules (42, 44, 46, and 48)." In comparing Fujita with the claimed invention, Applicant finds Fujita elements 42, 44, 46 and 48 to be disclosed as stop valves (Paragraph [0018]). Even if Applicant were to consider Fujita elements 42, 44, 46 and 48 (stop valves) in combination with Fujita elements 43, 45, 47 and 49 (actuators) (Paragraph [0015]), to represent the claimed control module, Applicant still does not find the Fujita control module to comprise *a processing unit* arranged as claimed. Accordingly, Applicant submits that absent anticipatory disclosure of each and every element of the claimed invention arranged as claimed, Fujita cannot be anticipatory.

Second, the Examiner has totally disregarded the "wherein" limitation of Claim 25, for reasons not specifically stated in the instant office action. If Applicant were to consider this unstated reason to be related to MPEP 2111.04 (which the Examiner referenced in Paper No. 20060215, page 2), Applicant respectfully submits that such a reason is unjustified in the instant case. With regard to MPEP 2111.04, Applicant respectfully submits that when a wherein clause states a condition that is material to patentability, it cannot be ignored in order to change the substance of the invention.

Here, the claimed wherein clause states that *only one of the actuatable valves opens to provide fluid communication between the gas storage device and the manifold in response to a signal from the processing unit and in the absence of another of the actuatable valves of a second control module of the plurality of control modules being open*, which Applicant submits is a dual condition that is material to patentability.

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As such, Applicant submits that the wherein clause cannot be disregarded as such disregard would change the substance of the claimed invention. In the presence of the wherein clause, Applicant submits that Fujita fails to disclose each and every element of the claimed invention arranged as claimed, and more specifically fails to disclose the elements of the wherein clause that claims a condition that is material to patentability.

Third, Applicant has amended Claim 25 to include limitations to a resistance-based interlock that serves to prevent more than one actuatable valve from simultaneously having an actuated state. In comparing Fujita with the claimed invention, Applicant finds Fujita to be absent such a resistance-based interlock element.

Dependent claims inherit all of the limitations of the parent claim.

In view of the amendment and foregoing remarks, Applicant submits that Fujita does not disclose each and every element of the claimed invention arranged as claimed and therefore cannot be anticipatory. Accordingly, Applicant respectfully submits that the Examiner's rejection under 35 U.S.C. §102(b) has been traversed, and requests that the Examiner reconsider and withdraw of this rejection.

#### **Rejections Under 35 U.S.C. §103(a)**

With reference to the Examiner's paragraph numbers in the instant office action:

4. Claim 2 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Fujita in view of Agricola et al (U.S. Publication No. US2002/0134342, hereinafter Agricola).
5. Claim 3 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Fujita as applied to Claim 1 above, and further in view of Takeda et al. (U.S. Publication No. US2002/0092575, hereinafter Takeda).
6. Claims 4-5 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Fujita as applied to claim 1 above, and further in view of Belcher, Jr. (U.S. Patent No. 2,793,813, hereinafter Belcher).

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7. Claims 4-5 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Fujita, and further in view of official notice taken by the Examiner.

8. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujita as applied to claim 1 above, and further in view of Petite et al. (U.S. Publication No. US2002/0125998, hereinafter Petite).

9. Claims 6 and 7 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Fujita, and further in view of official notice taken by the Examiner.

10. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fujita as applied to claim 1 above, and further in view of Watson (U.S. Patent No. 3,322,135, hereinafter Watson).

11. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fuita-Agricola as applied to claim 2 above, and further in view of Takeda.

12. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fujita as applied to claim 25 above, and further in view of Belcher.

13. Claims 1, 10-11, 14, 16, 18 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over McJones (U.S. Publication No. 3,719,196, hereinafter McJones) in view of Fujita.

14. Claims 2 and 19 stand rejected under 35 U.S.C. 103(a) as being unpatentable over McJones and Fujita as applied to claim 1 above, and further in view of Agricola.

15. Claims 3 and 20 stand rejected under 35 U.S.C. 103(a) as being unpatentable over McJones and Fujita as applied to claim 1 above, and further in view of Takeda.

16. Claims 4-5 stand rejected under 35 U.S.C. 103(a) as being unpatentable over McJones and Fujita as applied to claim 1 above, and further in view of Belcher.

17. Claims 4-5 stand rejected under 35 U.S.C. 103(a) as being unpatentable over McJones and Fujita.

18. Claims 6-7 stand rejected under 35 U.S.C. 103(a) as being unpatentable over McJones and Fujita as applied to claim 1 above, and further in view of Petite.

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19. Claims 6-7 stand rejected under 35 U.S.C. 103(a) as being unpatentable over McJones and Fujita.

20. Claim 9 stands rejected under 35 U.S.C. 103(a) as being unpatentable over McJones and Fujita as applied to claim 1 above, and further in view of Watson.

21. Claim 12 stands rejected under 35 U.S.C. 103(a) as being unpatentable over McJones, Fujita, Agricola et al. as applied to claim 2 above, and further in view of Takeda.

22. Claim 13 stands rejected under 35 U.S.C. 103(a) as being unpatentable over McJones and Fujita as applied to claim 1 above, and further in view of Fujita.

23. Claim 15 stands rejected under 35 U.S.C. 103(a) as being unpatentable over McJones and Fujita as applied to claim 1 above, and further in view of Fujita.

24. Claim 17 stands rejected under 35 U.S.C. 103(a) as being unpatentable over McJones and Fujita as applied to claim 16 above, and further in view of Agricola.

25. Claim 21 stands rejected under 35 U.S.C. 103(a) as being unpatentable over McJones and Fujita as applied to claim 16 above, and further in view of Belcher.

26. Claims 22-24 stand rejected under 35 U.S.C. 103(a) as being unpatentable over McJones, Fujita, Agricola as applied to claim 17 above, and further in view of Takeda.

27. Claim 26 stands rejected under 35 U.S.C. 103(a) as being unpatentable over McJones and Fujita as applied to claim 25 above, and further in view of Belcher.

Applicant traverses these rejections for the following reasons.

Applicant respectfully submits that the obviousness rejection based on the References is improper as the References fail to *teach or suggest each and every element of the instant invention in such a manner as to perform as the claimed invention performs*. For an obviousness rejection to be proper, the Examiner must meet the burden of establishing a prima facie case of obviousness. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988). The Examiner must meet the burden of establishing that all elements of the invention are taught or suggested in the prior art. MPEP §2143.03.

Regarding Claims 2-7, 9 and 12, and Examiner's Paragraphs 4-11

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As set forth above, Applicant has canceled Claim 8, and has amended Claim 1 to include the limitations of Claim 8. In view of Claim 8 being directed to allowable subject matter (Paper No. 20060703, page 16), Applicant respectfully requests entry of the amendment to Claim 1, notice of allowance thereof, and notice of allowance of all claims depending from Claim 1 for at least the reason that they depend from an allowable claim.

Regarding Claim 26, and Examiner's Paragraph 12

Claim 26 depends from Claim 25. The Examiner modifies Fujita by applying Belcher for its teaching of an impedance device. However, and as set forth above, Applicant finds no teaching in Fujita to arrive at all of the limitations of now amended Claim 25, and Applicant submits that Belcher is equally deficient in this regard. In view of Claim 26 being dependent upon Claim 25, and in view of the burden on the Examiner to show that each and every element of the claimed invention is taught or suggested by the prior art, Applicant submits that absent a showing of each and every element of the claimed invention arranged to perform as the claimed invention performs, a prima facie case of obviousness cannot be established.

Regarding Claims 1, 10-11 and 14, and Examiner's Paragraph 13

As set forth above, Applicant has canceled Claim 8, and has amended Claim 1 to include the limitations of Claim 8. In view of Claim 8 being directed to allowable subject matter (Paper No. 20060703, page 16), Applicant respectfully requests entry of the amendment to Claim 1, notice of allowance thereof, and notice of allowance of all claims depending from Claim 1 for at least the reason that they depend from an allowable claim.

Regarding Claims 16 and 18, and Examiner's Paragraph 13

In alleging obviousness against Claim 16, the Examiner merely recites the language of Claim 16 without further explanation as to where each and every element of the claimed invention is taught or suggested in the prior art of record.

However, in an effort to advance this case to allowance, Applicant has amended Claim 16 as set forth above to incorporate some of the limitations now found in Claims 7 and 25, which Applicant submits are not found in the prior art of record.

Dependent claims inherit all of the limitations of the parent claim.



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Absent a teaching or suggestion of each and every element of the claimed invention arranged so as to perform as the claimed invention performs, a prima facie case of obviousness cannot be established.

Regarding Claim 25, and Examiner's Paragraph 13

In alleging obviousness against Claim 25, the Examiner merely recites the language of Claim 25 without further explanation as to where each and every element of the claimed invention is taught or suggested in the prior art of record.

However, in an effort to advance this case to allowance, Applicant has amended Claim 25 as set forth above to incorporate some of the limitations now found in Claims 7 and 16, which Applicant submits are not found in the prior art of record.

Absent a teaching or suggestion of each and every element of the claimed invention arranged so as to perform as the claimed invention performs, a prima facie case of obviousness cannot be established.

Regarding Claims 2-7, 9, 12, 13 and 15, and Examiner's Paragraphs 14-23

As set forth above, Applicant has canceled Claim 8, and has amended Claim 1 to include the limitations of Claim 8. In view of Claim 8 being directed to allowable subject matter (Paper No. 20060703, page 16), Applicant respectfully requests entry of the amendment to Claim 1, notice of allowance thereof, and notice of allowance of all claims depending from Claim 1 for at least the reason that they depend from an allowable claim.

Regarding Claims 17, 19, 20, 21, and Examiner's Paragraphs 14, 15, 24, 25

Claims 19 and 20 depend from Claim 16.

Applicant has amended Claim 16 as set forth above.

In alleging obviousness, the Examiner modifies McJones and Fujita in view of Agricola, Takeda or Belcher, for reasons unrelated to *the supplying of power insufficient to actuate the actuatable valve if more than one switch is closed*, in addition to some of the other limitations of now amended Claim 16, and Applicant submits that Agricola, Takeda and Belcher fail to cure these deficiencies of McJones and Fujita.

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Accordingly, Applicant submits that absent a teaching or suggestion of each and every element of the claimed invention arranged so as to perform as the claimed invention performs, a prima facie case of obviousness cannot be established.

Regarding Claim 26, and Examiner's Paragraph 27

Claim 26 depends from Claim 25. In alleging obviousness against Claim 25, the Examiner merely recites the language of Claim 25 without further explanation as to where each and every element of the claimed invention is taught or suggested in the prior art of record.

Applicant has amended Claim 25 as set forth above.

Claim 26 recites, inter alia:

"...wherein *the power from the power source is sufficient to drive no more than one impedance device to an actuatable state* for opening the actuatable valve..."

In alleging obviousness of Claim 26, the Examiner remarks that "The term 'wherein' is being given patentable weight in such that the system *only need to be capable of* only opening one valve at a time." Paper No. 20060703, pages 15-16.

Here, Applicant finds the Examiner to be changing the substance of the invention without proper support therefore, and respectfully submits that when a wherein clause states a condition that is material to patentability, it cannot be ignored in order to change the substance of the invention. MPEP 2111.04.

As claimed, and in addition to the limitations of Claim 25, Applicant is claiming a limitation that requires the condition that *the power from the power source be sufficient to drive no more than one impedance device*. Even if the prior art of record was capable of driving no more than one impedance device, the Examiner has not shown how this supports any reasoning of the prior art device having only enough *power sufficient to drive no more than one impedance device*. As such, Applicant submits that an arrangement that is *capable of* driving no more than one impedance device is substantially different from the claimed invention that *only has power sufficient to drive* no more than one impedance device.

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In view of the foregoing, Applicant submits that the prior art of record fails to teach or suggest each and every element of the claimed invention arranged so as to perform as the claimed invention performs, and therefore does not support a prima facie case of obviousness.

Regarding Claim 7, and Examiner's Paragraphs 8, 9, 18, 19

Applicant has rewritten Claim 7 in independent form to include all of the limitations of the original base claim and any intervening claim, and other limitations as set forth above.

As such, Claim 7 now recites, inter alia:

"A gas regulation system, comprising:

a manifold;

a plurality of control modules in fluid communication with the manifold, wherein each of the control modules comprises an actuatable valve in fluid communication with an associated gas storage device, *each of the actuatable valves having a known resistance in an actuated state*, and a local control-processing unit in electrical communication with a manifold controller;

*a resistance-based interlock defined by an electrical series of resistances of each of the actuatable valves, the interlock being active in response to one of the actuatable valves being in an actuated state, thereby defining a threshold resistance comprising the known resistance;*

*a power source in electrical communication with each of the actuatable valves, the power source having a power output insufficient to overcome the threshold resistance, thereby preventing more than one of the actuatable valves from simultaneously having an actuated state; and*

*each gas storage device comprising a unique identifier readable by the manifold controller."*

In alleging obviousness of Claim 7, the Examiner modifies Fujita in view of Petite, Fujita in view of official notice, McJones and Fujita in view of Petite, and McJones and Fujita in view of official notice, but nowhere does Applicant find where the

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Examiner shows where the prior art of record teaches or suggests each gas storage device comprising a unique identifier.

The Examiner comments: "Regarding claim 7, the local actuators *inherently* have a unique identifier otherwise the system would not work." Paper 20060703, page 17 (emphasis added).

Applicant respectfully disagrees that the prior art of record *inherently* discloses *each gas storage device comprising a unique identifier*.

First, it appears that the Examiner is relying on an inherency argued to support a showing of the claim limitation. In response, Applicant respectfully submits that for an inherency argument to stand, the Examiner must meet the burden of showing that the claimed limitations are *necessarily* present in the prior art of record. In the instant case, Applicant submits that the prior art of record (Fujita) shows separate dashed lines leading from the control unit 60 to the actuators 43, 45, 47, 49, which without more description could mean that dedicated control lines and dedicated pins at the control unit are used for communicating with the actuators, and does not *necessarily* mean that one control line may be used with all actuators with each actuator having a unique identifier to distinguish therebetween. Contrary to the Examiner's allegation, Applicant submits that it is not *necessary* for the local actuators to have a unique identifier for the Fujita system to work.

Second, the Examiner alleges obviousness of the claimed invention by referring to *a unique identifier at the Fujita actuators*. However, the claimed invention is directed to *unique identifiers at each gas storage device*. As such, Applicant submits that the Examiner has not shown where each and every element of the claimed invention is disclosed in the prior art in such a manner as to perform as the claimed invention, and therefore a prima facie case of obviousness has not been established.

In addition to the foregoing reasons, Applicant submits that the prior art of record is also deficient in a teaching or suggestion of the claimed resistance-based interlock, and the cooperation of the power source in association therewith.

Absent a teaching or suggestion of each and every element arranged to perform as the claimed invention performs, a prima facie case of obviousness cannot be established.

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In view of the foregoing, Applicant submits that the References fail to teach or suggest each and every element of the claimed invention and are therefore wholly inadequate in their teaching of the claimed invention as a whole, fail to motivate one skilled in the art to do what the patent Applicant has done, fail to offer any reasonable expectation of success in combining the References to perform as the claimed invention performs, and discloses a substantially different invention from the claimed invention, and therefore cannot properly be used to establish a prima facie case of obviousness. Accordingly, Applicant respectfully requests reconsideration and withdrawal of all rejections under 35 U.S.C. §103(a), which Applicant considers to be traversed.

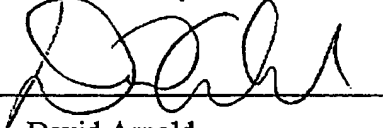
In light of the foregoing, Applicant respectfully submits that the Examiner's rejections under 35 U.S.C. §102(b) and 35 U.S.C. §103(a) have been traversed, and respectfully request that the Examiner reconsider and withdraw these rejections.

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The Commissioner is hereby authorized to charge any additional fees that may be required for this amendment, or credit any overpayment, to Deposit Account No. 06-1130.

In the event that an extension of time is required, or may be required in addition to that requested in a petition for extension of time, the Commissioner is requested to grant a petition for that extension of time that is required to make this response timely and is hereby authorized to charge any fee for such an extension of time or credit any overpayment for an extension of time to the above-identified Deposit Account.

Respectfully submitted,  
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